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Human Values Teaching Programs in the Clinical Education of Medical Students—Janet Bickel 369

Premedical and Medical School Performance in Predicting First-Year Residency Performance—Linda K. Gunzburger, Robert G. Frazier, Lih-Meei Yang, Michael L. Rainey, and Teresa Wronski 379

Graduates' Assessments of Undergraduate Training in Ambulatory Primary Care Education—Michael Glasser and Judith Gravdal 385

Effect of a Course on Students' Attitudes Toward Substance Abuse and Its Treatment—John N. Chappel and Tracy L. Veach 394

Physicians' Assessment of Deficiencies and Desire for Training in Adolescent Care—Robert Blum 401

Effect of a Clerkship on Students' Attitudes Toward Practice Problems and Preventive Care—Bernard S. Linn and Robert Zeppa 408

Support Groups and Other Supportive Efforts in Residency Programs—Diane B. Brashear 418

Communications: Sources of Stress in Postgraduate Medical Training—Anita D. Taylor, Ann Sinclair, and Eric M. Wall 425

Comparison of Mood Changes and Satisfaction Among First-Year Medical Residents in Three Programs—Geoffrey H. Gordon, Donald E. Girard, and David H. Hickam 428

Effects of Test Anxiety on Performance on the NBME Part I Examination—Henry T. Frierson, Jr., and Dennis Hoban 431

Ratings by Practicing Internists and Faculty Members of the Importance and Use of Selected Procedural Skills—Craig R. Garrett 433

Teachers' and Students' Ratings of Clinical Teaching and Teachers' Opinions on Use of Student Evaluations—Sheila M. Fallon, Lila G. Croen, and Steven P. Shelov 435

Residents' Underdocumentation in Elderly Patients' Records of Prescriptions for Benzodiazepine—David G. Buchsbaum, Peter Boling, and Michael Groh 438

Briefs 440

Editorial: Stress in Graduate Medical Education 443

Datagram: Clinician-Educator Faculty Tracks in U.S. Medical Schools 444

Book Review 448

Bibliography 450

Letters to the Editor 455

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Physicians' Assessment of Deficiencies And Desire for Training in Adolescent Care

Robert Blum, M.D., Ph.D.

Abstract—Over the past decade, there has been growing awareness among medical educators and care providers of the deficits in the training of primary care physicians to meet the health care needs of adolescents. The study reported here is the first national survey of primary care physicians' perceptions of their competency in dealing with adolescents' health concerns. In the survey, 351 internists, family practitioners, and pediatricians rated their competency in 19 areas of adolescent health care. Approximately three-quarters or more of the internists indicated deficits in all 19 areas. In areas related to gynecologic concerns, more pediatricians reported deficits than family physicians; but more family physicians than pediatricians reported deficiencies in managing acute conditions of youth (growth and developmental problems, endocrinopathies, school-based problems, and chronic illnesses). All physicians indicated deficiencies in dealing with high-risk health behaviors: eating disorders, drug and alcohol abuse, homosexuality, and delinquency. Finally, more than 45 percent of the physicians overall reported deficiencies in areas related to social and/or emotional concerns, including suicide, depression, and family conflicts. Despite these acknowledged deficits, most of the primary care physicians did not indicate adolescents to be the least desirable age group with which to work. However, few of the physicians expressed a desire to improve their skills. Overall, in none of the 19 areas did more than 30 percent of the physicians who had reported deficiencies in an area express interest in improving their competency.

In the 1980s, studies in the United States and Canada have indicated adolescent health to be one of the major areas of training and knowledge identified as deficient by physicians (1, 2). At the same time, primary care physicians are increasingly confronted with issues of adolescent health care that previously they had been able to ignore or refer. Adolescent sexuality and pregnancy, drug use and abuse, physical and sexual abuse, disabling physical conditions, eating disorders, family conflict, and learning disabilities are but a few of the conditions confronting the primary care physician who sees adolescents. The present study was undertaken to identify the areas of adolescent health care in which family physicians, internists, and pediatricians in the United States

The study reported here was supported in part by grant MCJ 273616-01-0, Bureau of Maternal and Child Health, U.S. Department of Health and Human Services.

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perceived deficiencies in their knowledge and/or training. Also, the areas in which these physicians desired to improve their competency were identified.

Methods

As one component of a larger multidiscipline study, 751 physicians in family practice, internal medicine, and pediatrics were identified nationally using a random selection process. These physicians' names were drawn from the rosters of the American Academy of Family Practice, American College of Physicians, and American Academy of Pediatrics. These physicians were sent a questionnaire in 1985, and 351 responded. The overall response rate was 46.7 percent, with 37.9 percent of the family physicians, 52.1 percent of the internists, and 54.2 percent of the pediatricians responding.

The questionnaire was developed by the author, reviewed by consultants from each of the three specialties surveyed, and subsequently tested on approximately 50 physicians. The questionnaire was revised and mailed to the sample. To increase the response rate, the questionnaire was mailed twice to the same physicians two weeks apart. Nonrespondents to the second mailing received follow-up telephone calls during which an abbreviated questionnaire was completed.

The questionnaire asked respondents to provide information on their age, specialty and subspeciality, board certification status, size of community, and type of practice setting. They were asked the percentage of adolescents in their practice and which patient age group they liked seeing least. Using a checklist, respondents were asked to indicate in which of 19 areas of adolescent health care they felt they had deficiencies and in which of these areas of deficiency they desired to improve their competence through continuing education.

The responses were collected and tabulated with the assistance of a national survey firm. Use of a randomized sampling technique for the responses of those who were members of the American Association of Family Physicians and the American College of Internal Medicine revealed that the findings were generalizable to all physician members of those organizations. For pediatricians, a disproportionate number of the respondents were members of the Section on Adolescent Medicine of the American Academy of Pediatrics; therefore, the findings may not be generalizable to the entire membership of the academy.

Results

The respondents' demographic characteristics showed that the pediatricians tended to be older (chi-square = 34.5, $p < .001$) and were more likely to have specialty board certification (chi-square = 25.8, $p < .001$) than the other two groups. The internists and pediatricians were more likely to subspecialize than the family practitioners (chi-square = 40.3, $p < .001$). More pediatricians (40 percent) than the other groups specialized in social behavioral, developmental, public health, and adolescent medicine. Conversely 90 percent of the internists who subspecialized reported specializing in specific organ systems. The family physicians were more likely than the others to practice in communities of less than 25,000, while the internists and pediatricians were disproportionately represented in large urban centers. Finally, though the finding was not statistically significant, the family physicians tended to practice in private group or solo settings more than the other two groups, while the pediatricians were more likely than the others to be university- or hospital-based.

The internists were the least likely of the groups to see adolescents, with 11

percent reporting that they had almost no teenagers in their practice and an additional 64 percent reporting that less than 10 percent of their practice was composed of adolescents. Of the family physicians, more than half (58 percent) reported that 10 to 25 percent of their patient practice was composed of adolescents. Much like the internal medicine specialists, the family physicians almost never reported serving large adolescent populations (that is, more than 25 percent of their practice). By contrast, 36 percent of the pediatricians reported that adolescents comprised more than 25 percent of their practices. Even when controlling for those pediatricians who identified themselves as oriented toward adolescent health care, the pediatricians were still more likely to have sizable adolescent practices than their colleagues in the other primary care specialties.

When the respondents were asked which age group of patients they enjoyed seeing least, they rarely identified adolescents. Additionally, there were no identifiable, significant differences among the 10 percent of family physicians, 5 percent of pediatricians, and 12 percent of internists who reported adolescents to be their least favorite age group.

In assessing areas of deficiency, at least one-quarter of all of the physicians indicated deficiencies in each of the 19 categories examined (Table 1). However, the specialists differed in their assessments. First, approximately three-quarters or more of the internists reported deficiencies in all 19 areas. Second, in areas related to adolescent gynecology (family planning, pregnancy diagnosis, menstrual disorders, and sexually transmitted diseases), more of the pediatricians acknowledged deficiencies than family physicians (chi-square = 42.1, $p < .001$). On the other hand, more of the family physicians than pediatricians indicated deficiencies in areas related to the management of acute and chronic conditions of youth — the areas of growth and developmental problems, endocrinopathies, school-based problems, and chronic illnesses (chi-square = 125.8, $p < .001$). Third, all three groups reported deficiencies in dealing with the health problems of high-risk behaviors and/or life-styles (eating disorders, drug and alcohol abuse, homosexuality, and delinquency). Additionally, social and/or emotional concerns (suicide risk, depression, and family conflicts) were areas of weakness reported by more than 45 percent of the total respondents.

The respondents were asked to indicate the barriers they saw in managing adolescent health concerns. Lack of training, which was identified by 45 percent of respondents, was the primary barrier. A secondary yet important issue, identified by 36.8 percent, was the commitment of time needed to manage adolescent problems. A relatively insignificant barrier, identified by only 18.2 percent, was financial considerations.

The participants were also asked to indicate in which of the 19 areas they would like to improve their clinical competencies. Table 2 shows the percentage of those physicians who had indicated they were insufficiently trained in an area who reported they desired further training in that area. Despite their acknowledged deficiencies, few of the physicians expressed a desire to improve their skills. Overall, in none of the 19 areas did more than 30 percent of the physicians who had reported deficiencies in an area indicate an interest in improving their competency.

Those areas of deficiency in which the largest percentages of family physicians reported a desire for improvement were: menstrual disorders (42.3 percent), depression (39.2 percent), sports-related injuries and problems (38.7 percent),

TABLE 1

Numbers and Percentages of 351 Primary Care Physicians in Three Specialties Who Reported They Had Insufficient Training in 19 Areas of Health Care for Adolescents, 1985*

Areas	Specialties						Total (n = 351)	
	Family Practice (n = 125)		Internal Medicine (n = 50)		Pediatrics (n = 176)		No.	Percent
	No.	Percent	No.	Percent	No.	Percent		
Growth and development problems	61	48.8	45	90.0	30	17.1	136	38.7
Adolescent endocrinology	98	78.4	42	84.0	105	59.7	245	69.8
Acne	19	10.8	37	74.0	30	17.1	86	24.5
Obesity	33	26.4	39	78.0	42	23.9	114	32.5
Anorexia and/or bulimia	96	76.8	45	90.0	107	60.8	248	70.7
Sports-related injuries and health problems	31	24.8	46	92.0	102	57.9	179	51.0
Sexually transmitted diseases	19	15.2	37	74.0	51	29.0	107	30.5
Pregnancy diagnosis	14	11.2	39	78.0	38	21.6	91	25.9
Menstrual disorders	26	20.8	42	84.0	63	35.8	131	37.3
Alcohol and drug abuse assessment	54	43.2	41	82.0	90	51.1	185	52.7
Homosexuality	87	69.6	43	86.0	112	63.6	242	68.9
Family conflicts	56	44.8	46	92.0	62	35.2	164	46.7
Suicide risk assessment	66	52.8	48	96.0	87	49.4	201	57.3
School-based learning and/or behavior problems	94	75.2	48	96.0	58	33.0	200	57.0
Management of chronic illness	99	79.2	44	88.0	88	50.0	231	65.8
Depression	52	41.6	41	82.0	100	56.8	193	55.0
Birth control and/or family planning	17	13.6	41	82.0	71	40.3	129	36.8
Psychosomatic complaints	32	25.6	38	76.0	37	21.2	107	30.5
Delinquency	96	76.8	48	96.0	102	58.0	246	70.1

* Respondents were from a national, randomly selected sample of 751 specialists in family practice, internal medicine, and pediatrics.

school-based learning and behavior problems (38.3 percent), alcohol and drug abuse assessment (37.0 percent), and family conflicts (35.7 percent). For pediatricians, these areas were sports-related injuries (36.3 percent), family conflicts (35.5 percent), alcohol and drug abuse assessment (31.1 percent), and depression and suicide (30 percent each). Too few of the internists desired to improve their competencies in the 19 areas to make the analysis meaningful.

With regard to those areas in which 65 percent or more reported deficiencies (delinquency, management of chronic illness, homosexuality, anorexia and/or bulimia, and adolescent endocrinology), less than 30 percent of those in any specialty group reporting such deficiencies had an interest in upgrading their skills.

Discussion

Over the past 30 years, physicians have witnessed an ascendancy of what has been labeled the "new morbidities," which are associated with life-style and social fac-

tors. Although the major morbidities and mortalities for adolescents have shifted from primarily infectious to primarily social etiologies, the health care sector has been slow to respond. Health care providers see only a small fraction of those youths who sustain illness or disability from the new morbidities. Marks and colleagues (3), for example, have shown that adolescents have a large number of personal health concerns for which they would like professional assistance but never seek help: weight, birth control, emotional problems, and fatigue. The same study reported that over 20 percent of the youth regularly used illicit drugs but that only 1 percent had sought professional help for drug use and an additional 6 percent would have liked to do so.

There is mounting evidence that physicians feel poorly trained to meet the changing needs of adolescents. The present study indicated that teenagers are not shunned by physicians, because only 9 percent overall reported that they liked adolescents least of all age groups. Rather, most of the respondents felt insufficiently trained to assist with many of the problems faced by youth.

These findings are consistent with those of other surveys that have reported deficits in the skills and training needed by physicians to provide health care for youth. A national survey of physicians in Canada, for example, found that over 50 percent identified deficiencies in their training related to adolescent medicine (1). In 1978 the Task Force on Pediatric Education of the American Academy of Pediatrics reported that American pediatricians believed their skills in adolescent medicine to be a major weakness (2).

Other studies have noted comparable deficits. In Illinois, Rosenthal and Miller (4) reported adolescent medicine, behavioral pediatrics, delinquency, and drug abuse to be among the nine top priorities in continuing education for pediatricians. In 1983 Resnick (5) noted that primary care physicians (pediatricians, general practitioners, and family physicians) reported discomfort and lack of preparation in meeting the social and psychological consequences of the many medical conditions with which adolescents presented as major reasons for avoiding the adolescent population.

The interweave of adolescent medicine with behavioral and/or psychological issues is undeniable. However, youth are in no way unique in presenting with such concerns. In a British survey of pediatricians (6), most recognized that nearly one-third of all outpatient visits and a significant number of inpatient consultations were for problems predominantly emotional or behavioral in nature. Among family physicians, the same has been found. Stoudemire and colleagues (7) reported that family practitioners spend one-third of their professional time dealing with psychosocial disorders such as somatic complaints, symptoms of emotional distress, alcohol and drug abuse, and family or marital problems.

In the present study, social and/or emotional concerns were areas of deficiency identified by more than half of all physicians. However, of those who identified these concerns as areas of weakness in their training, less than one-third would choose to strengthen their skills in such areas—family conflict, substance abuse, eating disorders, and homosexuality.

A debate has raged among primary care specialists as to whose domain is adolescent health care. Although the American Academy of Pediatrics has identified the scope of pediatric practice to extend through 21 years of age (2), many hospitals restrict inpatient pediatric admissions

TABLE 2

Numbers and Percentages of Primary Care Physicians in Three Specialties Who Had Identified Themselves as Deficient in Each of 19 Areas of Health Care for Adolescents Who Desired To Increase Their Proficiency in Those Areas, 1985*

Areas	Specialties						Total	
	Family Practice		Internal Medicine		Pediatrics		No.	Percent†
	No.	Percent†	No.	Percent†	No.	Percent†		
Growth and development problems	18	29.5	3	6.7	7	23.3	28	20.6
Adolescent endocrinology	28	28.6	0	0	30	28.6	58	23.7
Acne	4	21.1	2	5.4	6	20.0	12	14.0
Obesity	9	27.3	2	5.1	9	21.4	20	17.5
Anorexia and/or bulimia	19	19.8	2	4.4	18	16.8	39	15.7
Sports-related injuries and health problems	12	38.7	2	4.3	37	36.3	51	28.5
Sexually transmitted diseases	4	21.1	3	8.1	11	21.6	18	16.8
Pregnancy diagnosis	1	7.1	0	0	4	10.5	5	5.5
Menstrual disorders	11	42.3	3	7.1	14	22.2	28	21.4
Alcohol and drug abuse assessment	20	37.0	2	4.9	28	31.1	50	27.0
Homosexuality	20	23.0	1	2.3	29	25.9	50	20.7
Family conflicts	20	35.7	0	0	22	35.5	42	25.6
Suicide risk assessment	16	24.2	3	6.3	26	29.9	45	22.4
School-based learning and/or behavior problems	36	38.3	2	4.2	14	24.1	52	26.0
Management of chronic illness	23	23.2	2	4.5	9	10.2	34	14.7
Depression	20	39.2	1	2.4	30	30.0	51	26.4
Birth control and/or family planning	3	17.6	0	0	16	22.5	19	14.7
Psychosomatic complaints	10	31.3	0	0	6	16.2	16	15.0
Delinquency	24	25.0	2	4.2	23	22.5	49	19.9

* Respondents were from a national, randomly selected sample of 751 specialists in family practice, internal medicine, and pediatrics.

† In each cell, the percentage was derived by dividing the number in the cell by the number in the corresponding cell in Table 1. For example, 29.5 percent of the family practice physicians desiring to increase their proficiency in the area of growth and development problems represented 18 (Table 2) of 61 (Table 1) physicians.

to those under 16 years, with older adolescents generally being admitted to adult medicine units. Additionally, 60 percent of pediatricians use age cutoffs to limit the number of adolescents in their practices (5).

Family physicians remain the primary providers of outpatient health care to youth. What becomes clear from the present survey is that, despite identified training and skill deficits, most physicians who provide health care to youth are reluctant to undertake continuing education to remedy the deficiencies. The present report indicates that, unless physicians' resistance to dealing with social, behavioral, and life-style morbidities is addressed in medical school, barriers to providing health care to adolescents will persist for physicians for the duration of their clinical practice. The increasing prevalence of these new morbidities will accentuate the poor fit between physicians' training and adolescents' health needs. The long-term consequence is that the gap between the health needs of adolescents and the skills of primary care providers may continue to widen.

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COMMUNICATIONS

Sources of Stress in Postgraduate Medical Training

Anita D. Taylor, Ann Sinclair, and Eric M. Wall, M.D.

Residency programs are often described as highly stressful environments. Studies of the stresses during the graduate medical training years have focused on identifying specific problems caused by the professional environment, such as lack of leisure time, feelings of ambiguity about professional and personal roles, feelings of inadequacy, and sleep deprivation (1, 2). In addition to work-related stress, people experience "life events—e.g. marriage, pregnancy, retirement—which necessitate adaptation by the individual" (3). Life events have been identified by Holmes and Rahe (4) as stressors that frequently require social readjustment. Whether the stresses during medical training are solely attributable to the work setting or are also related to life events has not been addressed in the literature.

The first year of residency has been characterized as the "weakest link in the entire chain of physician training" (5). Often, in response to specific crises, personal stress reduction and management programs have been developed for first-year residents (6–8). Alexander and colleagues (9), however, found that such support may be needed beyond the first year of the residency. They reported no significant differences on measures of personal and occupational stress among residents at each level in a three-year program.

In the study reported here, the authors sought to determine the patterns of life events during postgraduate medical training that might contribute to the stress residents experienced during that period.

Ms. Taylor is a lecturer in the Department of Public Health and Preventive Medicine, and Ms. Sinclair is a senior research assistant and Dr. Wall the director of research and assistant professor in the Department of Family Medicine, all at the Oregon Health Sciences University School of Medicine, Portland.

For related editorial, see page 443.

Methods

In 1984 questionnaires were sent to all residency and fellowship program directors in Oregon for distribution to their house officers and fellows in all years of training. Seven life events were presented as items on the questionnaire: marriage, major geographic relocation, death in immediate family, birth of child, separation or divorce, unexpected increase in financial burdens, and major illness in family. In addition, 12 items were included that related to behavioral and attitudinal changes, for instance, increase in family conflict, decrease in social interaction, and self-doubt concerning choice of specialty. The questionnaire was developed through a Delphi process. The residents and fellows were asked to indicate which items had occurred during each of their years of training. Responses were recorded only as "occurred" or "did not occur." That is, if a respondent indicated that a particular event occurred more than once during a given year, the response on that item was scored only once for that year for that respondent.

Results

A total of 530 questionnaires were distributed, and 243 (45.8 percent) residents and fellows in a total of at least six different years of training returned the questionnaires. Most of the respondents were 35 years of age or less, most were males, and most were in their first three years of residency training. The numbers of respondents who were eligible to report on life events and behavioral and attitude changes in each of the postgraduate years were: first year, 243; second year, 195; third year, 133; fourth year, 68; fifth year, 31; and sixth year and above, 12.

All 243 respondents reported at least one event. The numbers of respondents reporting experiencing each of the seven life events were:

"major geographic relocation," 196 respondents; "marriage," 138 respondents; "unexpected increase in financial burdens," 86 respondents; "major illness in family," 69 respondents; "birth of child," 67 respondents; "death in immediate family," 54 respondents, and "separation or divorce," 37 respondents.

The responses were examined for increases

TABLE 1

Number and Percentage of Residents and Fellows in Oregon Reporting Experiencing Major Life Events and Changes in Behavior and Attitudes, by Postgraduate Year (PGY) in Which Event or Change Occurred, 1984*

Events and Changes	PGY-1 (n = 243)		PGY-2 (n = 195)		PGY-3 (n = 133)		PGY-4 (n = 68)		PGY-5 (n = 31)		≥PGY-6 (n = 12)	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Marriage	32	13.2	19	9.7	8	6.0	3	4.4	3	9.7	0	
Major geographic relocation	166	88.3	32	16.4	11	8.3	11	16.2	3	9.7	0	
Death in immediate family	14	5.8	11	5.6	3	2.3	2	2.9	2	6.5	1	8.3
Birth of child	17	7.0	18	9.2	18	13.5	10	14.7	4	12.9	0	
Separation or divorce	13	5.3	4	2.1	1	0.8	1	1.5	2	6.5	0	
Personal difficulty adjusting to schedule	86	35.4	27	13.8	10	7.5	12	17.6	2	6.5	0	
Family difficulty adjusting to schedule	74	30.5	29	14.9	11	8.3	6	8.8	2	6.5	2	16.7
Increase in family conflict	42	17.3	16	8.2	8	6.0	9	13.2	2	6.5	2	16.7
Major illness in family	23	9.5	19	9.7	15	11.3	5	7.4	0		1	8.3
Unexpected increase in financial burdens	39	16.0	21	10.8	12	9.0	14	20.6	5	16.1	1	8.3
Increased responsibilities of spouse or "significant other"	42	17.3	31	15.9	16	12.0	11	16.2	2	6.5	2	16.7
Decrease in social interaction	118	48.6	47	24.1	21	15.8	16	23.5	5	16.1	1	8.3
Significant change in eating habits	58	23.9	20	10.3	9	6.8	6	8.8	3	9.7	0	
Change in sleeping habits	128	52.7	47	24.1	24	18.0	6	8.8	3	9.7	1	8.3
Difficulty adjusting to work demands	63	25.9	19	9.7	6	4.5	10	14.7	2	6.5	1	8.3
Conflict with colleagues	9	3.7	4	2.1	4	3.0	4	5.9	3	9.7	1	8.3
Conflict with superiors	17	7.0	11	5.6	11	8.3	8	11.8	2	6.5	1	8.3
Self-doubt about choice of specialty	70	28.8	37	19.0	16	12.0	12	17.6	2	6.5	2	16.7
Concern about future	66	27.2	52	26.7	44	33.1	27	39.7	10	32.3	4	33.3

* A total of 530 questionnaires were distributed in all residency and fellowship programs in Oregon in all years of postgraduate medical training, and 243 residents and fellows in a total of at least six different years of training responded. The numbers given for each postgraduate year (PGY) above refer to the respondents who were eligible to report on life events and behavioral and attitudinal changes in the respective PGY. If a respondent indicated that a particular item occurred more than once during a given year, the item was recorded only once for the year for that respondent.

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Comparison of Mood Changes and Satisfaction Among First-Year Medical Residents in Three Programs

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Studies of residents' mood changes during the first year of training have documented the occurrence of various dysphoric states, including depression, fatigue, anger, and dissatisfaction (1–7). Because these studies have used different methodologies and examined individual training programs, the generalizability of the findings is unknown. In the present study, which was conducted in three separate internal medicine training programs, the authors compared mood changes and satisfaction among the residents and developed a measurement instrument relevant to clinical training.

Materials and Methods

Mood changes are commonly evaluated using adjective rating lists such as the Profile of Mood States (POMS), a 65-item, 5-point instrument of known validity and reliability (8). The POMS yields scores on six mood factors and has been used to study emotional changes during the residency (2, 3). However, it requires considerable time to complete and does not address certain emotions relevant to the residency, such as feelings of mastery and achievement. To overcome these obstacles, the present authors developed a 14-item, self-administered rating list of emotion descriptors relevant to the residency experience. Three groups of residents were asked to rate their current agreement or disagreement with each descriptor on a Likert-type scale in which 1 represented strong agreement and 5 represented strong disagreement.

This descriptor list and the POMS were administered to the 36 first-year internal medicine residents in the University of California, Irvine, Program B at the Veterans Administration Medical Center, Long Beach, six times during the 1982–83 year: at residency orientation and 1, 3, 6, 8 and 11 months into training. Principal components analysis (9) was applied to the responses to group the 14 items into mood scales that could be examined statistically. These mood scales were compared with the six POMS mood factors by use of bivariate correlation analysis. In the next phase of the study, the 14-item instrument was given to two additional groups of residents in different training programs, and these data were analyzed using the mood scales derived from the Long Beach data. The 14-item instrument was given to the 25 first-year internal medicine residents at the Oregon Health Sciences University (OHSU) and to the 13 first-year internal medicine residents at the Good Samaritan Hospital and Medical Center in Portland, Oregon. These residents completed

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